UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,764	01/23/2001	Richard Louis Arndt	AUS920000447US1	1266

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EXAMINER
SCHNEIDER, JOSHUA D

ART UNIT	PAPER NUMBER
2182	

DATE MAILED: 01/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _20 November 2003_.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-6_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-6_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some * c) ☐ None of:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____.
   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
   application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.
   a) ☐ The translation of the foreign language provisional application has been received.

14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 11/20/2003 have been fully considered but they are not

persuasive. With regards to the rejection under 35 U.S.C. 112, second paragraph, the arguments

fail to address the rejection fully. As stated in the rejection, while the use of terminal bridges is

shown in the drawings, and discussed in the specification, no definition is given to define the

breadth of the limitation as set forth in the claims. The arguments have failed to clarify this

problem, and have in fact exacerbated the situation by stating that the rejection is to the

foundations of the words. The Applicant arguments only clarify that the term terminal bridge is

in some way definable, but do not particularly point out and distinctly claim the subject matter

which applicant regards as the invention. It seems clear from the specification that it is not

intended to be the broadest interpretation that has been argued, which could be as little as a wire

between two devices.

2.   With regards to the rejection under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent 4,843,541 to Bean et al. in further view of U.S. Patent 6,438,671 to Doing et al., the Bean

reference is argued to be an invalid reference. The reference is first attacked because it states

that the plural CPUs could share each real resource in the system. Applicant is reminded that the

total teachings of the reference are used in making the rejection. This line simply broadens the

scope of the invention of Bean to include systems where resources must be shared, such as a

single processor system acting as a virtual multiple processor system. It is clear from the

reference this is not the only way for the invention to be used, but rather just another use.

Furthermore, the suggestion that Bean fails to show or suggest in any way the physical limitation

of access is found to be irrelevant, as this is not found in any of the claims. The utilization of a "terminal bridge" is inherent in the handling of I/O requests as there must be a connection for the transactions to take place. The arguments with regards to the Doing reference contain similar errors in addressing the rejection. There is no limitation in the claims that states that the action of limiting the transmission to the I/O adapters is limited by a terminal bridge.

3.   The Applicant arguments to the rejection to claims 3, 5, and 6, also are not persuasive as there is no limitation in the claims that states that the range registers are interposed between I/O adapters and a data transmission line as claimed in the arguments. The Applicant arguments to the rejection to claim 4 is also not persuasive as the Kondo reference is not relied upon for the teaching which the applicant has argued it does not contain.

4.   Finally, with regards to the double patenting rejection, the Applicant has argued that the argument that a terminal bridge is well known is not logically defensible in view of the rejection under 35 U.S.C. 112, second paragraph. Applicant is reminded that all further rejections were given in light of the specification as best understood in view of the rejection under 35 U.S.C. 112, second paragraph. Therefore, the interpretation of the term terminal bridge was found to be well known and in fact inherent to any system with I/O adapters, as there must be at least some connection of the functional units, for the I/O adapters to be functional. This is the same as the broadest interpretation given by the applicant in response to the rejection.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6.   Claims 1 and 3, and dependent claims 2, and 4-6, are rejected under 35 U.S.C. 112,

second paragraph, as being indefinite for failing to particularly point out and distinctly claim the

subject matter which applicant regards as the invention.

7.   In claims 1 and 3, the term terminal bridge is not defined in the specification in such a

way as to give clear indication as to what is being claimed. While the use of terminal bridges is

shown in the drawings, and discussed in the specification, no definition is given to define the

breadth of the limitation as set forth in the claims.

8.   All further rejections are given in light of the specification as best understood in view of

the previous objections and rejections.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

10.   Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent

4,843,541 to Bean et al. in further view of U.S. Patent 6,438,671 to Doing et al.

11.   With regards to claim 1, Bean et al. teaches logical partitioning of data processing

systems, through resource allocation. Bean et al. teaches the assignment of memory (column 1,

lines 9-18, and 52-58), processors (column 1, lines 9-18, and 26-39), operating systems (or

programming systems or guests, column 1, lines 9-18, and 44-55), and input/output (I/O)

channels and subchannels (or adapters, column 1, lines 9-23), to different logical partitions

(column 1, lines 6-23). Bean et al. also teaches that a hypervisor (column 1, lines 36-43) for

controlling the resource allocation and any shared resources. The hypervisor (or host, see

column 8, lines 2-8) intercepts I/O requests and makes adjustments so that the addresses used are

in the area assigned to that partition (column 2, lines 11-40). Bean et al. teaches the use of

subchannels to connect a logically partitioned computer system to an I/O device, and this may be

viewed as the bus bridge. Bean fails to explicitly teach a data transmission bus and a terminal

bridge connected to a data transmission bus. However, the use of busses and bus bridges is well

known in the computer arts to connect drives and other peripherals to a host bus, as is taught by

Doing (Fig. 1, elements 105 and 110-115, column 7, lines 8-20). It would have been obvious to

one of ordinary skill in the art at the time of invention to combine the LPAR system of Bean with

busses and bus bridges of Doing in order to create a more robust system which prevents access to

unassigned system resources in order to support communication with a variety of storage and I/O

devices.

12.   With regards to claim 2, the PCI bus was a well-known specification often used in

modern computer systems. PCI bridges were well known in the art at the time of invention to

connect a PCI bus to a host bus.

13.   Claims 3, 5, and 6, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent 4,843,541 to Bean et al. and U.S. Patent 6,438,671 to Doing et al. as applied to claims 1-2

above, and further in view of the Applicant Admitted Prior Art (AAPA).

14.   With regards to claims 3 and 5, Bean et al. does not teach the use of DMA address ranges

assigned to each IOA. It does teach the assignment of I/O channels and addresses to each of the

partitions (column 1, lines 9-21 and column 2, lines 11-40). The AAPA teaches that the DMA

range register facility (page 14, lines 17-21, of parent application) is well known and that known

drivers assign DMA addresses (page 2, lines 19-27, of parent application). The DMA range

registers function in the same way as the I/OA addresses, by blocking access to unassigned

partition resources. It would be obvious to one of ordinary skill in the art at the time of invention

to combine the partition resource assignment of Bean et al. with the AAPA DMA range register

facility in order to ensure that violations of partition boundaries do not occur in DMA transfers.

15.   With regards to claim 6, the programmability of range registers, the programmable

loading of range registers, and the loading of range registers is inherent to the use of the registers

with the other system resources in the transferring of data across the busses.

16.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent

4,843,541 to Bean et al. and U.S. Patent 6,438,671 to Doing et al. and the AAPA as applied to

claims 1-3 above, and further in view of U.S. Patent 6,584,530 to Kondo et al.

17.   With regards to claim 4, Bean fails to teach an arbiter that selects an I/OA, and assigns a

set of range registers based on a grant signal from the arbiter. Kondo et al. teaches an arbiter

selects an I/OA for bus access (column 1, line 42, through column 4, line 64). The associated

range registers, or DMA range registers, would be assigned along with the I/OA to use the data

transmission bus as taught by Bean and the AAPA with regards to claims 3 and 5 above. It

would have been obvious to one of ordinary skill in the art at the time of invention to combine

the arbiter to Kondo et al. with the partitioned resources of Bean in order to grant access requests

in a highest priority to destinations assigned to the I/O means.

Double Patenting

18.   The nonstatutory double patenting rejection is based on a judicially created doctrine
grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or
improper timewise extension of the "right to exclude" granted by a patent and to prevent possible
harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686
F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA
1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to
overcome an actual or provisional rejection based on a nonstatutory double patenting ground
provided the conflicting application or patent is shown to be commonly owned with this
application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal
disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37
CFR 3.73(b).

19.   Claim 1 is provisionally rejected under the judicially created doctrine of obviousness-

type double patenting as being unpatentable over claim 1 of copending Application No.

09/589,665. Although the conflicting claims are not identical, they are not patentably distinct

from each other because the additional limitations are well known in the art. The parent

application does not claim a data transmission bus or at least one terminal bridge connected to

the data transmission bus. However, these elements are well known in computer systems. The

inventive concept as set forth by the specification is the prevention of data transmission between

an I/O adapter with a first logical partition and a memory location unassigned to the first logical

partition, which is found in the claims of the parent application.

This is a <u>provisional</u> obviousness-type double patenting rejection because the conflicting

claims have not in fact been patented.

Conclusion

20.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

21.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joshua D Schneider whose telephone number is (703) 305-7991.

The examiner can normally be reached on M-F, 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jeffrey A Gaffin can be reached on (703) 308-3301. The fax phone number for the

organization where this application or proceeding is assigned (703)-892-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

JDS

JEFFREY GAFFIN
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